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NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

For Supervisor's use only

Level 1 Human Biology, 2009

90176 Describe how humans respond to pathogens

Credits: Two

9.30 am Friday 27 November 2009

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should answer ALL the questions in this booklet.

If you need more space for any answer, use the page(s) provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–7 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

For Assessor's use only		Achievement Criteria		
Achievement		Achievement with Merit		Achievement with Excellence
Describe how humans respond to pathogens.	<input type="checkbox"/>	Explain how humans respond to pathogens.	<input type="checkbox"/>	Discuss how humans respond to pathogens. <input type="checkbox"/>
Overall Level of Performance				<input type="checkbox"/>

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QUESTION TWO

Immunity to measles could be gained by **active immunity**.

A child is given the MMR vaccine once when **15 months** old, and again when **four** years old. The MMR vaccine helps a child to gain immunity to the viral diseases of measles, mumps and rubella.

- (a) Explain the purpose of the first and second vaccines in active immunity.

Immunity to measles could also be gained by **passive immunity**.

A three-year-old boy who has not has the second MMR vaccine meets a person who has measles. The boy is given an injection of antibodies to stop him developing measles.

- (b) Explain how passive immunity is gained.

(c) Explain how long each type of immunity in (a) and (b) will last.

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Discuss how THREE of these prevent entry of pathogens into the body.

[illegible]

**Extra paper for continuation of answers if required.
Clearly number the question.**

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